

1 1. **(Amended)** A method for pre-processing an access plan generated for a query in
2 a relational database management system to include a direct call mechanism replacing a lookup
3 function of a run-time interpreter, said access plan including a plurality of operation codes, each
4 of said operation codes being associated with one or more executable functions for performing
5 the query, said method comprising the steps of:

6 (a) determining from the access plan an executable function associated with a first
7 operation code; and

8 (b) augmenting said first operation code in the access plan with a pointer to said
9 executable function to provide a direct call mechanism.

1 2. The method as claimed in claim 1, further comprising repeating steps (a) and (b) for the
2 remaining operation codes in the access plan.

1 3. The method as claimed in claim 1, wherein said step (b) comprises augmenting said first
2 operation code in the access plan with a pointer to an intermediate function, said intermediate
3 function including a data structure for storing a pointer to said executable function.

1 4. The method as claimed in claim 3, wherein said data structure includes means for storing
2 information associated with said executable function or said first operation code.

1 5. The method as claimed in claim 1, wherein said step (b) comprises augmenting said first
2 operation code in the access plan with a second pointer to a data structure, said data structure
3 providing means for storing information associated with said first operation code or said
4 executable function.

1 6. The method as claimed in claim 1, wherein said step (a) further includes assessing the
2 executable function associated with the first operation code and if applicable, replacing the call
3 to the executable function with a call to a second executable function.

1 7. The method as claimed in claim 3, wherein said intermediate function includes
2 processing operations for the first operation code or the executable function associated with the
3 first operation code.

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1 8. The method as claimed in claim 7, wherein said processing operations in the intermediate
2 function include gathering statistics on the use of the executable function associated with the
3 operation code.

1 9. The method as claimed in claim 7, wherein said processing operations in the intermediate
2 function include a pause for receiving user input before or after the call to the executable
3 function.

1 10. **(Amended)** A computer program product for use on a computer wherein queries are
2 entered by a user for retrieving data in a relational database management system having a query
3 optimizer for generating an access plan for executing the query, said query optimizer including a
4 direct call mechanism replacing the lookup function of a run-time interpreter, said computer
5 program product comprising:

6 a recording medium;
7 means recorded on said recording medium for instructing said computer to perform the
8 steps of:

9 (a) determining an executable function associated with a first operation code in the
10 access plan, the first operation code being one of a plurality of operation codes; and

11 (b) augmenting said first operation code in the access plan with a pointer to said
12 executable function to provide a direct call mechanism.

1 11. The computer program product as claimed in claim 10, the means for instructing said
2 computer further comprising repeating steps (a) and (b) for the remaining operation codes in the
3 access plan.

1 12. The computer program product as claimed in claim 10, wherein said step (b) comprises
2 augmenting said first operation code in the access plan with a pointer to an intermediate function,
3 said intermediate function including a data structure for storing a pointer to said executable
4 function.

1 13. The computer program product as claimed in claim 12, wherein said data structure
2 includes means for storing information associated with said executable function or said first
3 operation code.

1 14. The computer program product as claimed in claim 10, wherein said step (b) comprises
2 augmenting said first operation code in the access plan with another pointer to a data structure,
3 said data structure providing means for storing information associated with said first operation
4 code or said executable function.

1 15. The computer program product as claimed in claim 10, wherein said step (a) further
2 includes assessing the executable function associated with the first operation code and if

3 applicable, replacing a call to the executable function with a call to another executable function.

1 16. The computer program product as claimed in claim 12, wherein said intermediate
2 function includes processing operations for the first operation code or the executable function
3 associated with the first operation code.

1 17. The computer program product as claimed in claim 16, wherein said processing
2 operations in the intermediate function include gathering statistics on the use of the executable
3 function associated with the first operation code.

1 18. The computer program product as claimed in claim 12, wherein said processing
2 operations in the intermediate function include a pause for receiving user input before or after a
3 call to the executable function.

1 19. **(Amended)** A relational database management system for use with a computer system
2 wherein queries are entered by a user for retrieving data from tables, the relational database
3 management system including a query optimizer for generating an access plan associated with
4 the queries entered by the user, said query optimizer including a direct call mechanism replacing
5 a lookup function of a run-time interpreter, said relational database management system
6 comprising:

7 (a) means for determining an executable function associated with each of a plurality
8 of operation codes in the access plan; and

9 (b) means for augmenting said operation codes in the access plan with a pointer to
10 said executable function associated with each operation code to provide a direct call mechanism.

1 20. The relational database management system as claimed in claim 19, wherein said means
2 for augmenting said operation codes includes means for replacing said operation codes in the
3 access plan with a pointer to an intermediate function, said intermediate function including a data
4 structure for storing a pointer to said executable function.

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1 21. The relational database management system as claimed in claim 20, wherein said data
2 structure includes means for storing information associated with said executable function or said
3 operation codes.

1 22. The relational database management system as claimed in claim 19, wherein said
2 means for augmenting said operation codes includes means for adding another pointer to a data
3 structure, said data structure providing means for storing information associated with said
4 operation codes or said executable function.
